ABSTRACT:

Background:

Orbital fractures also constitute one of the common injuries of the maxillofacial region. They may occur either as isolated fractures or as blowout fractures or as part of the more complex zygoma fractures. The management of orbital fractures has always been a challenging task for the oral and maxillofacial surgeons in terms of access and perfect alignment and fixation. The incisions for the approach of orbital floor can be classified as transcutaneous and transconjuctival. The transcutaneous incisions are subciliary, subtarsal and infraorbital. Although all three transcutaneous incisions provide good access to the surgical site, they differ in terms of simplicity of the approach, time needed to gain access and esthetic results.

The increasing emphasis on open reduction and bone grafting techniques in the management of orbital rim and floor fractures have made the need for search of incisions which provide good exposure of the fracture site along with minimal cosmetic deformity.The purpose of this dissertation is to prospectively analyze and compare the various transcutaneous incisions for open reduction and internal fixation of infraorbital rim fractures.

Aim:

Aim of the study is to randomly compare three transcutaneous incisions – subciliary, subtarsal and infraorbital for open reduction and internal fixation of infraorbital rim fractures of zygoma.

Objectives:

To evaluate the following parameters in the three transcutaneous incisions for the management of infraorbital rim fractures

1) Average time from incision to the fracture site exposure.
2) surgical exposure
3) Scar
4) Chronic lid edema
5) Ectropion
6) Scleral show

Materials and Methods:

Thirty patients with zygomatic complex fractures with or without other fractures of the facial skeleton who reported to Tamilnadu Government Dental College were included in the study. It was a prospective study. The patients were randomly divided into three groups with each group having ten patients. In Group I patients were treated with subciliary incision, Group II patients were treated with subtarsal incision and in Group III patients were treated with infraorbital incision. The parameters assessed and documented were average time from incision to the fracture exposure, surgical exposure of the operative field attained, aesthetic appearance of the scars, scleral show, chronic lid edema and ectropion. All the patients in the study were reviewed at regular intervals of first, third and sixth month postoperatively and evaluated functional and esthetic outcomes and the findings were evaluated by a single member blinded to the procedure. Ethical approval was obtained for the study from the institutional ethical committee.

Results:

The results of the current study shows that the common complication encountered with infraorbital approaches were noticeable unesthetic scar, bleeding from the site, injury to the neuro vascular bundle and chronic edema. However infraorbital incisions provided a very good exposure of the fracture site, most rapid access to the surgical site and had lesser post operative complications such as scleral show and ectropion. The subtarsal incision had the advantage of unnoticeable scars similar to subciliary along with lesser incidence of ectropion and scleral show compared with subciliary incision, since stepped skin muscles flap was used, but simultaneously provided a fairly good exposure of the fracture site and rapid access to the surgical site compared to the infraorbital incision. The subciliary incision on the other hand provided an excellent aesthetic outcome with almost invisible scars but showed higher incidence of ectropion, scleral show, not a very good exposure of fracture site especially in case of complex, communited fractures and orbital floor reconstruction and was a time consuming in terms of access to the fracture site and technique sensitive.

Conclusion:

From these observations it is concluded that the subtarsal approach is superior compared to the subciliary and infraorbital as it combines the advantages of an infraorbital incision such as adequate access, simplicity of use, reduced operatory time, less post operative complications such as ectropion and scleral show and that of a subciliary incision of an aesthetic unnoticeable scar. The subtarsal incision was found to be simple, predictable, effective and safe. No consistent approach for orbital fractures has gained universal acceptance. The choice of incision for the management of infraorbital floor or rim fractures should be an individualised approach based on the treatment plan rather than a fixed protocol.

Keywords;

Transcutaneous incisions, subciliary, subtarsal, infraorbital, infraorbital rim fractures.